

# Utah Vital Statistics: Quarterly Report

## Fourth Quarter 2003



May 14, 2004  
Technical Report Number 230

Produced by the Statistics Products Section  
Office of Vital Records and Statistics

**Jeff Duncan**  
**Director**

Staff Contributors:  
Marie Aschlimann, Mylitta Barrett, Cori Jones

Utah Department of Health  
Center for Health Data

OFFICE OF VITAL RECORDS AND STATISTICS  
PO BOX 141012  
SALT LAKE CITY UT 84114-1012

Located in the Cannon Health Building at 288 N 1460 W

Website: [health.utah.gov/vitalrecords](http://health.utah.gov/vitalrecords)  
Email: [vrequest@utah.gov](mailto:vrequest@utah.gov)  
Phone: (801) 538-6843  
Fax: (801) 538-7012

## Mission Statement

The Office of Vital Records and Statistics administers the statewide system of Vital Records and Statistics by documenting and certifying the facts of births, deaths, and family formation for the legal purposes of the citizens of Utah, participates in the National Vital Statistics System, and responds to the needs of health programs, health care providers, businesses, researchers, educational institutions and the Utah public for data and statistical information.

## Table of Contents

Page	
5	<u>Overview</u>
5	Table 1. Births, deaths, infant deaths, stillbirths, and population by health district, residents: Utah, fourth quarter 2003
6	Table 2. Births, c-sections, gestation under 37 weeks, mother under 20 years of age, and low birthweight by county of residence: Utah, fourth quarter 2003
7	Table 3. Deaths due to unnatural causes by county of residence: Utah, fourth quarter 2003 Figure 1. Leading Causes of Death, Residents: Utah, 4th Quarter 2003
9	<u>Utah Vital Statistics: A Historical Review</u>
9	Pregnancy Risk Factors Table 1. Medical Risk Factors Figure 1. Pregnancy Medical Risk Factors Reported on Birth Certificates, Utah 2000-2002
12	Weight and Pregnancy Medical Risk Factors Figure 2. Pregnancy Medical Risk Factors Reported on Birth certificates by Body Mass index 2000-2002
14	Age and Pregnancy Medical Risk Factors Figure 3. Pregnancy Medical Risk Factors Reported on Birth Certificates by Mother's Age 2000-2002
16	Conclusion

## Source of Data

Vital statistics birth and death certificates are required by law to be filed with the state Office of Vital Records and Statistics and are the primary source of data presented in this report. These birth and death data are provisional until published in the annual report, Utah's Vital Statistics: Births and Deaths (Year).



**Births, deaths, infant deaths, stillbirths, and population by health district:**  
**Utah, fourth quarter 2003**

Health district County	Population Number	Births		Deaths		Infant deaths		Stillbirths	
		4th Qtr Number	YTD Number	4th Qtr Number	YTD Number	4th Qtr Number	YTD Number	4th Qtr Number	YTD Number
Total	2,338,762	11,755	49,643	3,542	13,089	69	222	48	242
Bear River	141,322	743	3,255	182	736	5	16	4	16
Box Elder	43,812	174	813	73	291	0	1	3	5
Cache	95,460	561	2,411	107	439	5	15	1	11
Rich	2,050	8	31	2	6	0	0	0	0
Central Utah	67,673	270	1,168	150	582	0	3	0	5
Juab	8,643	29	170	20	67	0	1	0	1
Millard	12,335	46	204	39	119	0	1	0	0
Piute	1,409	2	15	1	18	0	0	0	0
Sanpete	23,550	96	393	40	174	0	0	0	2
Sevier	19,232	88	349	45	180	0	1	0	1
Wayne	2,504	9	37	5	24	0	0	0	1
Davis	250,265	1,327	5,442	314	1,187	0	17	7	30
Salt Lake	927,564	4,315	18,197	1,440	5,243	31	80	22	95
Southeastern	53,082	171	737	99	434	3	7	1	6
Carbon	19,858	70	312	58	236	0	1	0	2
Emery	10,540	41	169	18	79	2	3	0	1
Grand	8,468	16	74	14	56	1	1	0	0
San Juan	14,216	44	182	9	63	0	2	1	3
Southwest	152,960	765	3,188	285	1,074	7	18	1	7
Beaver	6,285	33	135	20	64	0	1	0	0
Garfield	4,599	25	77	8	39	2	4	0	0
Iron	35,507	166	782	44	194	5	8	0	2
Kane	5,958	7	64	11	39	0	0	0	0
Washington	100,611	534	2,131	202	738	0	5	1	5
Summit	32,236	123	520	29	93	1	3	1	5
Tooele	46,208	248	1,085	75	250	0	6	0	2
Tri-County	41,756	168	773	94	310	1	3	0	4
Daggett	916	1	11	1	4	0	0	0	0
Duchesne	14,856	65	293	35	113	0	1	0	1
Uintah	25,984	102	469	58	193	1	2	0	3
Utah County	398,056	2,503	10,735	433	1,715	16	48	8	47
Wasatch	16,847	108	388	29	86	0	1	0	1
Weber-Morgan	210,793	1,014	4,155	412	1,379	5	20	4	24
Morgan	7,416	23	111	12	39	0	0	0	1
Weber	203,377	991	4,044	400	1,340	5	20	4	23

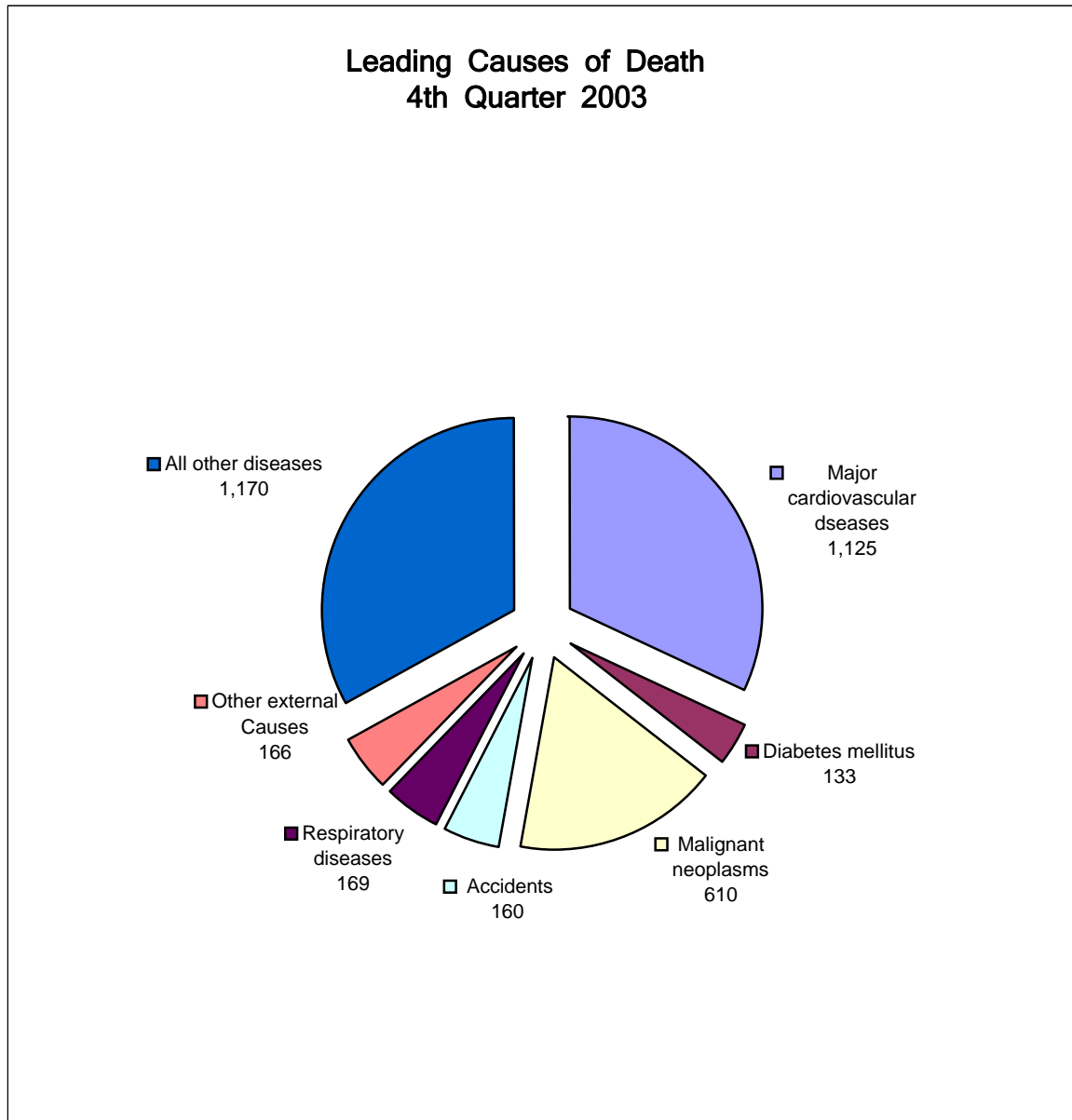
**Births, c-sections, gestation under 37 weeks, mothers under 20 years of age, and low birthweight by county of residence: Utah, fourth quarter 2003**

Health district County	Births		C-sections		Gestation under 37 weeks		Mothers under 20 years of age		Low birth weight				
	4th Qtr Number	YTD Number	4th Qtr Number	YTD Number	4th Qtr Number	YTD Number	4th Qtr Number	YTD Number	1st Qtr Number	2nd Qtr Number	3rd Qtr Number	4th Qtr Number	YTD Number
Total	11,755	49,644	2,435	9,715	1,215	4,708	814	3,307	747	825	852	845	3,269
Bear River	743	3,255	135	544	82	325	39	189	44	54	59	57	214
Box Elder	174	813	31	141	23	73	12	62	6	17	15	12	50
Cache	561	2,411	103	398	58	247	27	127	37	34	43	44	158
Rich	8	31	1	5	1	5	0	0	1	3	1	1	6
Central Utah	270	1,168	77	286	24	114	38	127	23	21	18	25	87
Juab	29	170	4	26	0	14	4	13	8	3	3	1	15
Millard	46	204	12	61	3	13	3	17	5	2	2	4	13
Piute	2	15	0	5	0	0	0	1	0	0	0	0	0
Sanpete	96	393	30	93	7	45	12	46	4	8	7	7	26
Sevier	88	349	29	92	13	37	19	49	5	7	6	11	29
Wayne	9	37	2	9	1	5	0	1	1	1	0	2	4
Davis	1,327	5,442	279	1,070	152	558	69	290	81	88	106	86	361
Salt Lake	4,315	18,197	888	3,648	441	1,689	323	1,315	277	326	306	339	1,248
Southeastern	171	737	50	191	21	78	15	81	16	11	21	12	60
Carbon	70	312	21	84	8	35	8	45	6	8	11	6	31
Emery	41	169	13	45	8	26	2	13	5	2	1	6	14
Grand	16	74	6	16	1	5	1	4	1	0	2	0	3
San Juan	44	182	10	46	4	12	4	19	4	1	7	0	12
Southwest	765	3,189	148	516	74	297	57	248	41	48	39	54	182
Beaver	33	135	11	30	2	10	1	10	3	1	0	1	5
Garfield	25	77	6	15	3	9	1	4	2	3	1	2	8
Iron	166	782	26	120	15	70	14	68	12	14	10	16	52
Kane	7	64	1	8	1	6	1	6	4	1	0	1	6
Washington	534	2,131	104	343	53	202	40	160	20	29	28	34	111
Summit	123	520	27	106	14	57	5	30	15	15	14	9	53
Tooele	248	1,085	63	241	23	124	29	82	22	32	14	11	79
Tri-County	168	773	38	158	22	75	20	104	12	12	9	17	50
Daggett	1	11	0	2	0	17	0	0	0	0	0	0	0
Duchesne	65	293	16	66	12	19	12	41	6	8	2	10	26
Uintah	102	469	22	90	10	39	8	63	6	4	7	7	24
Utah County	2,503	10,735	436	1,860	217	887	108	419	134	138	160	143	575
Wasatch	108	388	29	91	11	38	4	25	3	7	8	6	24
Weber-Morgan	1,014	4,155	265	1,004	134	466	107	397	79	73	98	86	336
Morgan	23	111	5	26	2	14	2	3	3	1	2	1	7
Weber	991	4,044	260	978	132	452	105	394	76	72	96	85	329

## Deaths due to unnatural causes by county of residence: Utah, fourth quarter 2003

Health district County	Deaths				Motor vehicle		Other accidents		Homocide		Suicide		Undetermined	
	4th Qtr Number	YTD Number	4th Qtr Number	YTD Number	4th Qtr Number	YTD Number	4th Qtr Number	YTD Number	4th Qtr Number	YTD Number	4th Qtr Number	YTD Number	4th Qtr Number	YTD Number
Total	3,542	13,089	319	1,228	61	255	99	364	15	55	74	328	77	259
Bear River	182	736	15	63	1	15	4	20	0	2	4	16	3	7
Box Elder	73	291	5	30	1	6	1	9	0	0	2	11	1	2
Cache	107	439	10	33	0	9	3	11	0	2	1	4	2	5
Rich	2	6	0	0	0	0	0	0	0	0	1	1	0	0
Central Utah	150	582	17	68	3	15	7	25	0	0	2	23	5	5
Juab	20	67	1	2	0	1	1	2	0	0	0	0	0	0
Millard	39	119	3	17	1	3	1	4	0	0	1	8	4	4
Piute	1	18	2	2	0	2	0	0	0	0	0	0	0	0
Sanpete	40	174	6	25	2	5	0	10	0	0	0	6	1	1
Sevier	45	180	4	17	0	3	4	7	0	0	1	8	0	0
Wayne	5	24	1	5	0	1	1	2	0	0	0	1	0	0
Davis	314	1,187	25	94	4	18	3	26	1	4	10	25	6	22
Salt Lake	1,440	5,243	133	500	24	84	44	143	11	35	30	148	35	119
Southeastern	99	434	14	50	2	11	2	14	1	1	3	13	3	9
Carbon	58	236	6	22	1	4	0	2	1	1	2	8	3	8
Emery	18	79	3	12	0	3	2	5	0	0	1	3	0	1
Grand	14	56	2	7	0	1	0	3	0	0	0	1	0	0
San Juan	9	63	3	9	1	3	0	4	0	0	0	1	0	0
Southwest	285	1,074	33	81	3	20	5	22	1	2	1	16	4	21
Beaver	20	64	0	5	1	3	0	0	0	0	0	0	0	1
Garfield	8	39	2	5	1	1	0	1	0	1	0	2	0	0
Iron	44	194	6	14	0	2	0	4	0	0	0	0	2	7
Kane	11	39	1	6	0	0	0	1	0	0	0	1	0	2
Washington	202	738	24	51	1	14	5	16	1	1	1	12	2	11
Summit	29	93	1	13	1	3	4	5	0	1	1	3	0	3
Tooele	75	250	4	19	5	9	2	5	0	1	0	3	3	5
Tri-County	94	310	9	32	5	12	2	9	0	1	4	11	0	5
Daggett	1	4	0	0	0	0	0	0	0	0	0	0	0	0
Duchesne	35	113	1	10	2	4	2	5	0	1	2	3	0	2
Uintah	58	193	8	22	3	8	0	4	0	0	2	8	0	3
Utah	433	1,715	44	198	8	43	13	59	0	4	5	35	13	42
Wasatch	29	86	1	5	2	3	1	4	0	0	1	1	0	0
Weber-Morgan	412	1,379	23	105	3	22	12	32	1	4	13	34	5	21
Morgan	12	39	2	7	0	1	1	5	0	0	1	2	0	0
Weber	400	1,340	21	98	3	21	11	27	1	4	12	32	5	21

Figure 1





# Utah Vital Statistics: A Historical Review

*Utah Vital Statistics: A Historical Review presents an overview of selected public health trends in Utah using data from Utah birth and death certificates. These data may be available for approved research projects. For more information or to request data, please contact the Utah Office of Vital Records and Statistics.*

## Pregnancy Risk Factors

Pregnancy can be complicated by health problems or lifestyle issues known as risk factors. These pregnancy risk factors can affect the mother or fetus, or both. A pregnancy is at risk when a problem is more likely than usual to occur. A problem can be caused by a health condition the mother had before she was pregnant or it could also arise during the pregnancy. Many different pregnancy risk factors can arise during a pregnancy, not all of which are mentioned in this report.

Risk factors fall into one of three categories:

### 1. Health problems of the mother

- High blood pressure
- Heart, lung, or liver disease
- Urinary tract infection
- Viral or bacterial infection
- Diabetes
- Severe asthma
- Seizure disorder

### 2. Obstetric concerns

- Problems in past pregnancies
- Mother younger than age 15 years or older than age 35 years
- Previous infant with birth defects
- Twins, triplets or more fetuses
- Bleeding, especially during second or third trimester
- Pregnancy-induced high blood pressure (pre-eclampsia)
- Abnormal fetal heart beat
- Intrauterine growth restriction (IUGR), fetus less than the 10<sup>th</sup> percentile of weight for gestational age

### 3. Health behaviors of the mother

- Smoking or drinking alcohol
- Taking drugs not prescribed by a doctor, including over-the-counter drugs
- Poor nutrition, including less than normal weight gain
- Lack of prenatal care

For each birth in Utah, information on risk factors is collected, processed and used by the state to assess health risk in Utah. The data are also sent to the National Center for Health Statistics. Table 1 lists the medical risk factors reported.

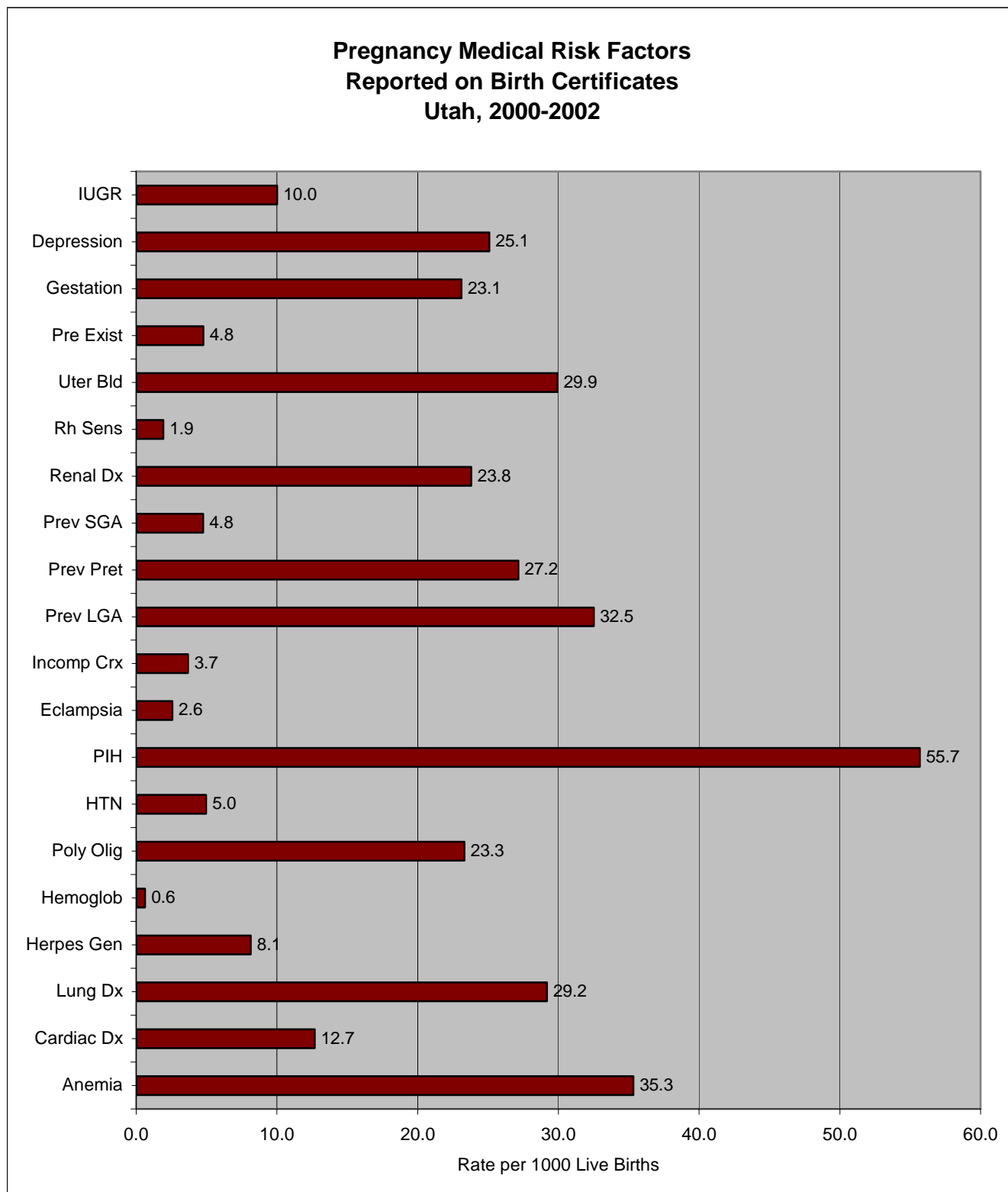
**Table 1**

## **Medical Risk Factors**

<b>Number on Birth Worksheet</b>	<b>Medical Risk Factor</b>	<b>Abbreviation for Graphs</b>
01	Anemia	Anemia
02	Cardiac Disease	Cardiac Dx
03	Acute or Chronic Lung Disease	Lung Dx
04	Diabetes (Not Specified)	Diabetes
05	Genital herpes	Herpes Gen
06	Hemoglobinopathy	Hemoglob
07	Polyhydramnios/Oligohydramnios	Poly Olig
08	Hypertension, Chronic	HTN
09	Hypertension, Pregnancy-Associated	PIH
10	Eclampsia	Eclampsia
11	Incompetent Cervix	Incomp Crx
12	Previous Infant 4000 + Grams	Prev LGA
13	Previous Preterm Infant	Prev Pret
14	Previous Small-for-Gestational-Age Infant	Prev SGA
15	Renal Disease	Renal Dx
16	Rh Sensitization	Rh Sens
17	Rubella	Rubella
18	Uterine Bleeding	Uter Bld
00	None	None
19	Other (Specify)	Other
20	Unknown	Unknown
21	Pre-Existing Diabetes (Type I or II)	Pre Exist
22	Gestational Diabetes	Gestation

Maternal characteristics, such as mother's age, height and weight, health behavior risk factors such as, alcohol or tobacco consumption, and prenatal care history are also collected along with the number, timing and outcome of previous births. Prenatal care providers also report other risk factors they believe could be important to the outcome of the pregnancy. Figure 1 shows the rates of reporting of the medical risk factors listed in Table 1. Rates for the two most frequent risk factors reported in the "Other" field, IUGR- and depression, are also shown. Pregnancy-induced hypertension is the most frequently reported risk factor.

**Figure 1**



## Weight and Pregnancy Medical Risk Factors

Body Mass Index (BMI) is an estimate of body fat, based on height and weight, and is a tool used to indicate weight status. BMI may indicate an increased risk of developing health problems; the higher the BMI, the more likely health risks are to occur. Although it is generally accurate, the BMI can read too high for athletes or others with large, heavy muscles. Likewise, it can exaggerate low readings for frail older people who have lost muscle mass.<sup>1</sup>

The calculation is the same for both men and women:<sup>2</sup>

$$\text{BMI} = \left( \frac{\text{Weight in Pounds}}{(\text{Height in inches}) \times (\text{Height in inches})} \right) \times 703$$

For this report, BMI is put into one of four categories.

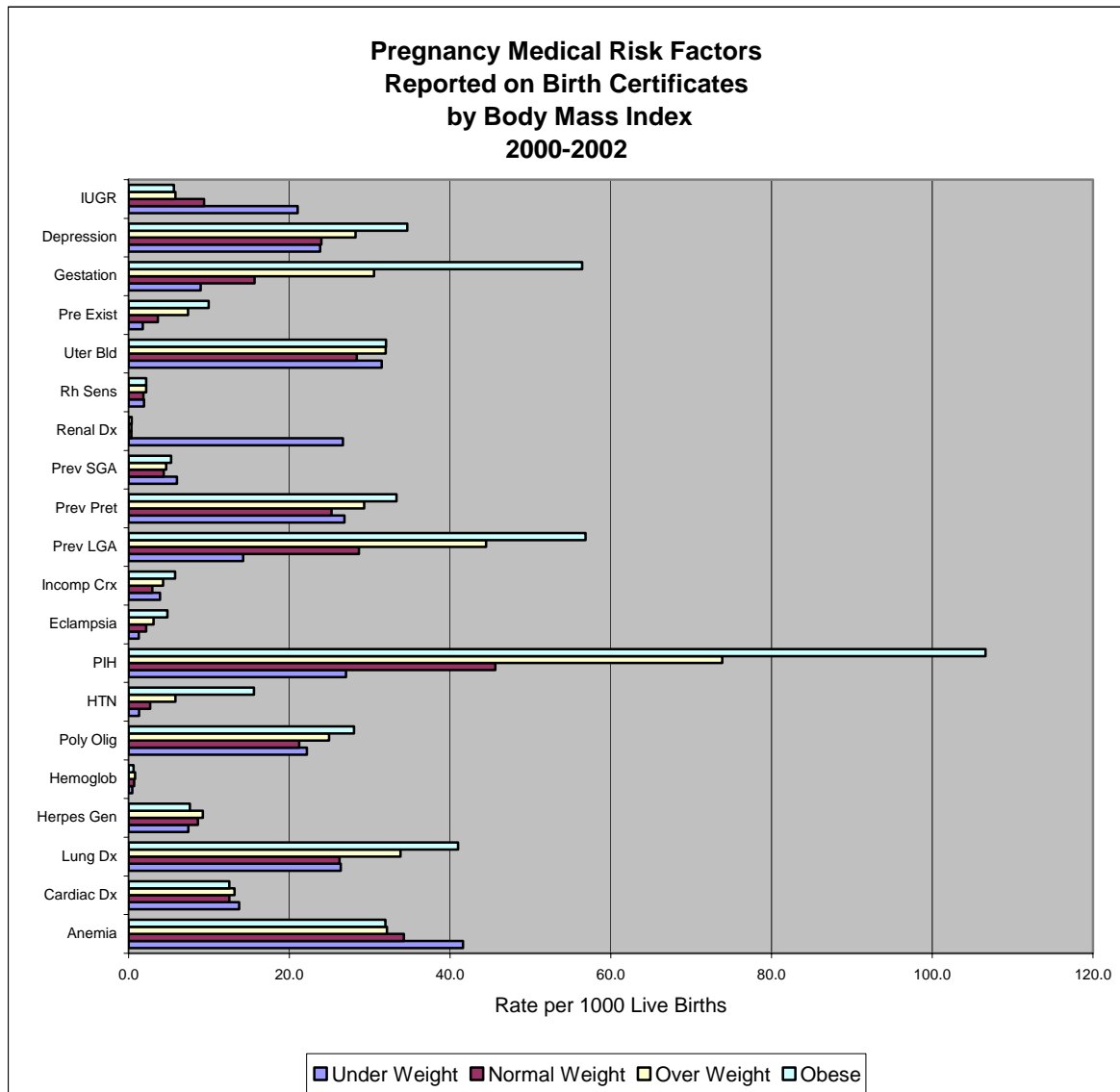
Less than 19.8	Under Weight
19.8 to 26.0	Normal Weight
26.1 to 29	Over Weight
Greater than 29.1	Obese Weight

A BMI that is either too low or too high can lead to poor pregnancy outcomes. Underweight women who become pregnant are at a higher risk for retarded fetal growth and perinatal mortality. Pre-pregnancy underweight is also associated with a higher incidence of various pregnancy complications, such as antepartum hemorrhage, premature rupture of membranes, anemia, endometriosis, and cesarean delivery. Women who are underweight when not pregnant have an increased risk of delivering a small-for-gestational-age (SGA) newborn. Inadequate weight gain (< 7 kg [< 15 lb]) in underweight women compounds the risk, so that the incidence of SGA newborns approaches 30%.

Conversely, maternal obesity is a risk factor for delivering a large-for-gestational-age (LGA) newborn, gestational diabetes, and hypertension.<sup>4</sup> Women who are overweight at conception also have increased obstetric risks for diabetes mellitus, hypertension, thromboembolic complications, preterm births, macrosomia, dysfunctional labor, and complications in operative deliveries.

Figure 2 shows how a woman's pre-pregnancy BMI affects known medical risk factors. The data indicate that underweight women have a higher incidence of anemia, IUGR, and more frequently report having had a previous SGA newborn. Obese women are more likely to develop gestational diabetes and pregnancy-related hypertension. They are more likely to have chronic lung disease, chronic hypertension and a previous LGA newborn.<sup>5</sup>

**Figure 2**



## **Age and Pregnancy Medical Risk Factors**

Maternal age can be related to adverse birth outcomes. Teen mothers and those over the age of 35 are considered high-risk groups with their own set of risk factors besides all of the other risks of pregnancy and delivery.

Maternal age is an important concern because of increased risks to health for both mother and baby. According to the March of Dimes, teens and women over 35 have risk factors that, although may occur in women of all ages, are more likely to occur to women in these age groups. Some of these characteristics include: <sup>6</sup>

### **Teens**

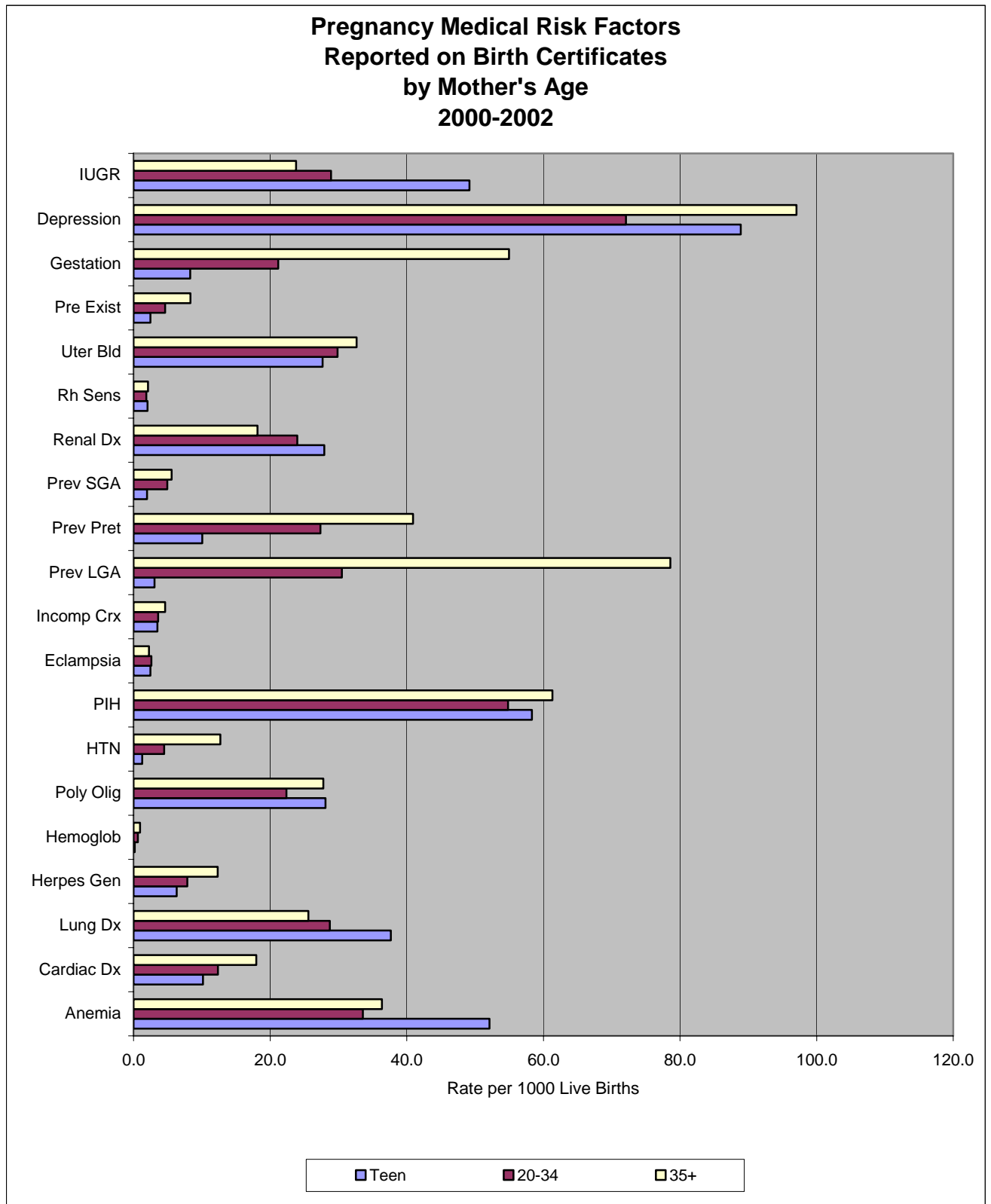
- Poor eating habits, neglect in taking a daily multivitamin
- Tobacco, alcohol and other drug use
- Inadequate weight gain
- Inadequate prenatal care
- Premature labor, anemia and high blood pressure
- Higher prevalence of sexually transmitted diseases
- Higher rates of small-for-gestational-age and low-birth-weight newborns

### **Women over age 35**

- Fertility problems
- High blood pressure
- Diabetes
- Multiple pregnancy (twins or more)
- Miscarriage
- Placenta previa
- Cesarean section
- A baby with a genetic disorder

Figure 3 shows how age is related to known medical risk factors for women in Utah. The data show teens have a higher incidence of IUGR, chronic lung disease and anemia. Women over 35 years of age are more likely to develop gestational diabetes, have pre-existing diabetes, chronic hypertension, cardiac disease and have had a previous LGA newborn. Women in both age groups are more likely to have problems with depression, pregnancy-induced hypertension, polyhydramnios or oligohydramnios.

**Figure 3**



## Conclusion

High-risk pregnancy is a pregnancy in which the mother or baby has an increased risk for morbidity or mortality before or after delivery. An at-risk-pregnancy is when a health condition or behavior, known as a risk factor, is known to be associated with poor pregnancy outcomes.

Some women will automatically be considered higher risk due to age or weight. However, all pregnancies should be evaluated to determine possible risk factors. Many risk factors can be involved; weighing each factor as a risk increment requires systematic review by a prenatal care provider. Classifying a pregnancy as high risk helps ensure that the mother receives extra attention to reduce as much as possible adverse outcomes.

A small number of women with known risk factors account for most pregnancy complications, but about one in five infants with serious problems are born to mothers with no known risk factors during pregnancy.<sup>7</sup>

## References

1. ARRP The Magazine; "Interactive Tools: Calculate Your Body Mass Index," Health; Washington DC; January 15, 2003; Available at ["http://www.aarpmagazine.org/health/Articles/a2003-01-15-boddymasscalc.html."](http://www.aarpmagazine.org/health/Articles/a2003-01-15-boddymasscalc.html)
2. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; "BMI for Adults Formula;" Body Mass Index; Overweight and Obesity; Nutrition and Physical Activity; Health Promotion; Hyattsville, Maryland; 2004; Available at ["http://www.cdc.gov/nccdphp/dnpa/bmi/bmi-adult-formula.htm."](http://www.cdc.gov/nccdphp/dnpa/bmi/bmi-adult-formula.htm)
3. ARRP The Magazine; Interactive Tools: "Calculate your Body Mass Index," Health; Washington DC; January 15, 2003; Available at ["http://www.aarpmagazine.org/health/Articles/a2003-01-15-boddymasscalc.html."](http://www.aarpmagazine.org/health/Articles/a2003-01-15-boddymasscalc.html)
4. MERCK; "High Risk Pregnancy: Risk Factors;" Gynecology/Obstetrics; The Merck Manual of Diagnosis and Therapy, 17<sup>th</sup> Edition, Sec. 18, Ch. 250; Available at ["http://www.merck.com/mrkshared/mmanual/section18/chapter250/250b.jsp."](http://www.merck.com/mrkshared/mmanual/section18/chapter250/250b.jsp)
5. MERCK; "High Risk Pregnancy: Risk Factors;" Gynecology/Obstetrics; The Merck Manual of Diagnosis and Therapy, 17<sup>th</sup> Edition, Sec. 18, Ch. 250; Available at ["http://www.merck.com/mrkshared/mmanual/section18/chapter250/250b.jsp."](http://www.merck.com/mrkshared/mmanual/section18/chapter250/250b.jsp)
6. March of Dimes; "Before You're Pregnant: Pregnancy after 35"; Pregnancy and Newborn Health Education Center; White Plains NY; 2004; Available at ["http://www.modimes.org/pnhec/173\\_812.asp."](http://www.modimes.org/pnhec/173_812.asp)
7. Discovery Health Channel, Search: "Pregnancy: Risk Factors;" Diseases and Conditions: D&C Encyclopedia; Available at ["http://health.discovery.com/encyclopedias/2086.html."](http://health.discovery.com/encyclopedias/2086.html)